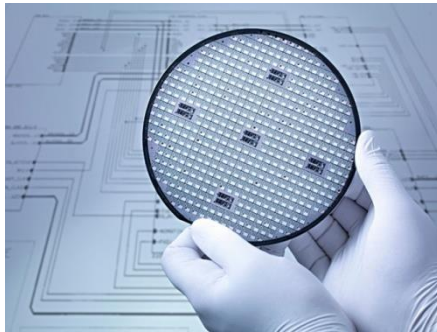


## 060mil 高可靠性 TVS 芯片选型



### TVS Diode series



## 060 高可靠性 TVS

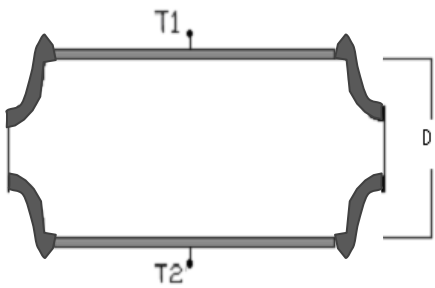
### 描述

该 TVS 系列产品适用于高可靠性要求的特殊应用环境，例如：车规、高端工控以及高空通讯基站等应用场景。

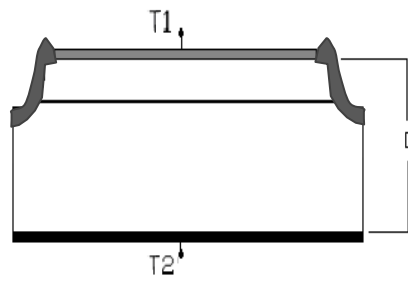
- 低漏电流
- 快速相应速度 (从 0->VBR 响应时间小于 1ps)
- 双层保护工艺 (电泳玻璃钝化+公司特有保护工艺)
- 良好的钳位能力
- 承受 400W 峰值脉冲 (10/1000 $\mu$ s)
- 符合 AEC-Q101 (封装匹配优秀情况下)

### 芯片结构图

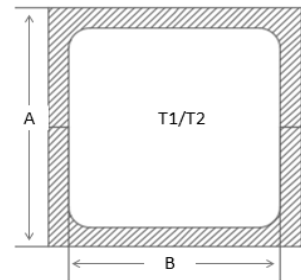
|                     |                                   |               |
|---------------------|-----------------------------------|---------------|
| 芯片工艺 Wafer tech     | 电泳玻璃钝化工艺+公司特有保护工艺                 |               |
| 圆片尺寸 Wafer Size     | $\Phi$ 5inch                      |               |
| 芯片厚度 Chip Thickness | D=265 $\pm$ 15 $\mu$ m(可根据客户要求定制) |               |
| 金属 (T1/T2) Metal    | 正面 Front                          | TiNiAg        |
|                     | 背面 Back                           | TiNiAg        |
| 芯片尺寸                | 芯片尺寸(A: $\mu$ m)                  | 1524 $\pm$ 50 |
|                     | 电极尺寸(B: $\mu$ m)                  | 1128 $\pm$ 25 |



(图 1: 双向 TVS 外沟槽结构示意图)



(图 2: 单向 TVS 外沟槽结构示意图)



(图 3: 芯片尺寸示意图)

**芯片电参数- TVS (VR)**

| 单向            | 双向            | V <sub>RWM</sub> | V <sub>BR</sub> @ I <sub>T</sub> |        | I <sub>T</sub> | V <sub>C</sub> @ I <sub>pp</sub> | I <sub>pp</sub> | I <sub>R</sub> @ V <sub>RWM</sub> |
|---------------|---------------|------------------|----------------------------------|--------|----------------|----------------------------------|-----------------|-----------------------------------|
|               |               | (V)              | (V)min                           | (V)max | (mA)           | (V) max                          | (A) min         | (μA) max                          |
| HP0060-N5V0A2 | HP0060-N5V0C1 | 5                | 6.4                              | 7      | 10             | 9.2                              | 43.5            | 500                               |
| HP0060-N6V0A2 | HP0060-N6V0C1 | 6                | 6.67                             | 7.37   | 10             | 10.3                             | 38.8            | 500                               |
| HP0060-N6V5A2 | HP0060-N6V5C1 | 6.5              | 7.22                             | 7.98   | 10             | 11.2                             | 35.7            | 100                               |
| HP0060-N7V0A2 | HP0060-N7V0C1 | 7                | 7.8                              | 8.6    | 10             | 12                               | 33.3            | 50                                |
| HP0060-N7V5A2 | HP0060-N7V5C1 | 7.5              | 8.33                             | 9.21   | 1              | 12.9                             | 31.0            | 50                                |
| HP0060-N8V0A2 | HP0060-N8V0C1 | 8                | 8.89                             | 9.83   | 1              | 13.6                             | 29.4            | 50                                |
| HP0060-N8V5A2 | HP0060-N8V5C1 | 8.5              | 9.44                             | 10.4   | 1              | 14.4                             | 27.8            | 20                                |
| HP0060-N9V0A2 | HP0060-N9V0C1 | 9                | 10                               | 11.1   | 1              | 15.4                             | 26.0            | 10                                |
| HP0060-N010A2 | HP0060-N010C1 | 10               | 11.1                             | 12.3   | 1              | 17                               | 23.5            | 5                                 |
| HP0060-N011A1 | HP0060-N011C1 | 11               | 12.2                             | 13.5   | 1              | 18.2                             | 22.0            | 1                                 |
| HP0060-N012A1 | HP0060-N012C1 | 12               | 13.3                             | 14.7   | 1              | 19.9                             | 20.1            | 1                                 |
| HP0060-N013A1 | HP0060-N013C1 | 13               | 14.4                             | 15.9   | 1              | 21.5                             | 18.6            | 1                                 |
| HP0060-N014A1 | HP0060-N014C1 | 14               | 15.6                             | 17.2   | 1              | 23.2                             | 17.3            | 1                                 |
| HP0060-N015A1 | HP0060-N015C1 | 15               | 16.7                             | 18.5   | 1              | 24.4                             | 16.4            | 1                                 |
| HP0060-N016A1 | HP0060-N016C1 | 16               | 17.8                             | 19.7   | 1              | 26                               | 15.4            | 1                                 |
| HP0060-N017A1 | HP0060-N017C1 | 17               | 18.9                             | 20.9   | 1              | 27.6                             | 14.5            | 1                                 |
| HP0060-N018A1 | HP0060-N018C1 | 18               | 20                               | 22.1   | 1              | 29.2                             | 13.7            | 1                                 |
| HN0060-N020A1 | HN0060-N020C3 | 20               | 22.2                             | 24.5   | 1              | 32.4                             | 12.4            | 1                                 |
| HN0060-N022A1 | HN0060-N022C3 | 22               | 24.4                             | 26.9   | 1              | 35.5                             | 11.3            | 1                                 |
| HN0060-N024A1 | HN0060-N024C3 | 24               | 26.7                             | 29.5   | 1              | 38.9                             | 10.3            | 1                                 |
| HN0060-N026A1 | HN0060-N026C3 | 26               | 28.9                             | 31.9   | 1              | 42.1                             | 9.5             | 1                                 |
| HN0060-N028A1 | HN0060-N028C3 | 28               | 31.1                             | 34.4   | 1              | 45.4                             | 8.8             | 1                                 |
| HN0060-N030A1 | HN0060-N030C3 | 30               | 33.3                             | 36.8   | 1              | 48.4                             | 8.3             | 1                                 |
| HN0060-N033A1 | HN0060-N033C3 | 33               | 36.7                             | 40.6   | 1              | 53.3                             | 7.5             | 1                                 |
| HN0060-N036A1 | HN0060-N036C3 | 36               | 40                               | 44.2   | 1              | 58.1                             | 6.9             | 1                                 |
| HN0060-N040A1 | HN0060-N040C3 | 40               | 44.4                             | 49.1   | 1              | 64.5                             | 6.2             | 1                                 |
| HN0060-N043A1 | HN0060-N043C3 | 43               | 47.8                             | 52.8   | 1              | 69.4                             | 5.8             | 1                                 |
| HN0060-N045A1 | HN0060-N045C3 | 45               | 50                               | 55.3   | 1              | 72.7                             | 5.5             | 1                                 |
| HN0060-N048A1 | HN0060-N048C3 | 48               | 53.3                             | 58.9   | 1              | 77.4                             | 5.2             | 1                                 |
| HN0060-N051A1 | HN0060-N051C3 | 51               | 56.7                             | 62.7   | 1              | 82.4                             | 4.9             | 1                                 |
| HN0060-N054A1 | HN0060-N054C3 | 54               | 60                               | 66.3   | 1              | 87.1                             | 4.6             | 1                                 |
| HN0060-N058A1 | HN0060-N058C3 | 58               | 64.4                             | 71.2   | 1              | 93.6                             | 4.3             | 1                                 |
| HN0060-N060A1 | HN0060-N060C3 | 60               | 66.7                             | 73.7   | 1              | 96.8                             | 4.1             | 1                                 |
| HN0060-N064A1 | HN0060-N064C3 | 64               | 71.1                             | 78.6   | 1              | 103                              | 3.9             | 1                                 |
| HN0060-N070A1 | HN0060-N070C3 | 70               | 77.8                             | 86     | 1              | 113                              | 3.6             | 1                                 |
| HN0060-N075A1 | HN0060-N075C3 | 75               | 83.3                             | 92.1   | 1              | 121                              | 3.3             | 1                                 |
| HN0060-N080A1 | HN0060-N078C3 | 80               | 88.7                             | 97.6   | 1              | 129.6                            | 3.1             | 1                                 |
| HN0060-N085A1 | HN0060-N085C3 | 85               | 94.4                             | 104    | 1              | 137                              | 2.9             | 1                                 |